Athena's b jet tagging using MC Zbb->eebb

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Higgs Multi-Leption Meeting

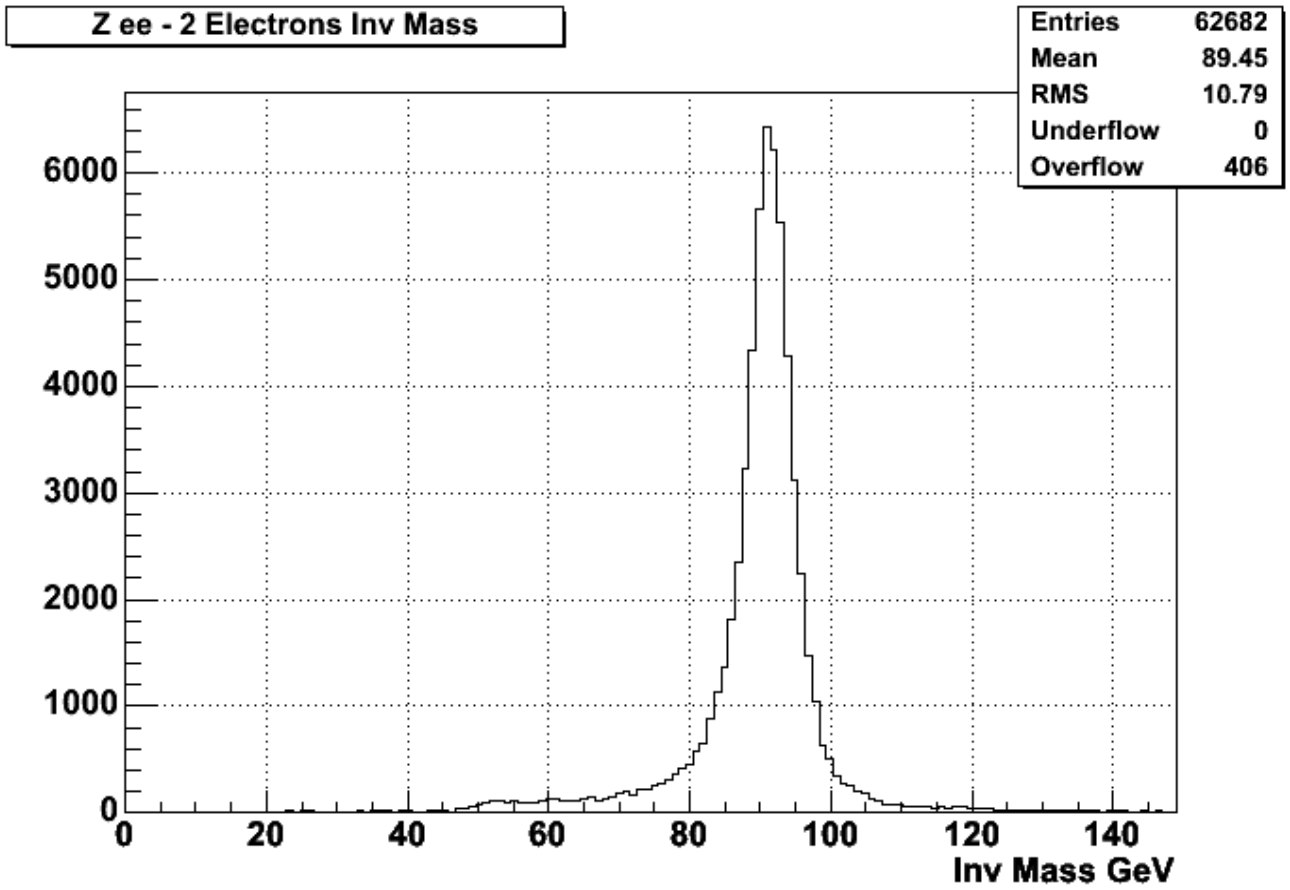
Monte Carlo sample

Zbb->eebb 98000 events
Athena v01-05-02

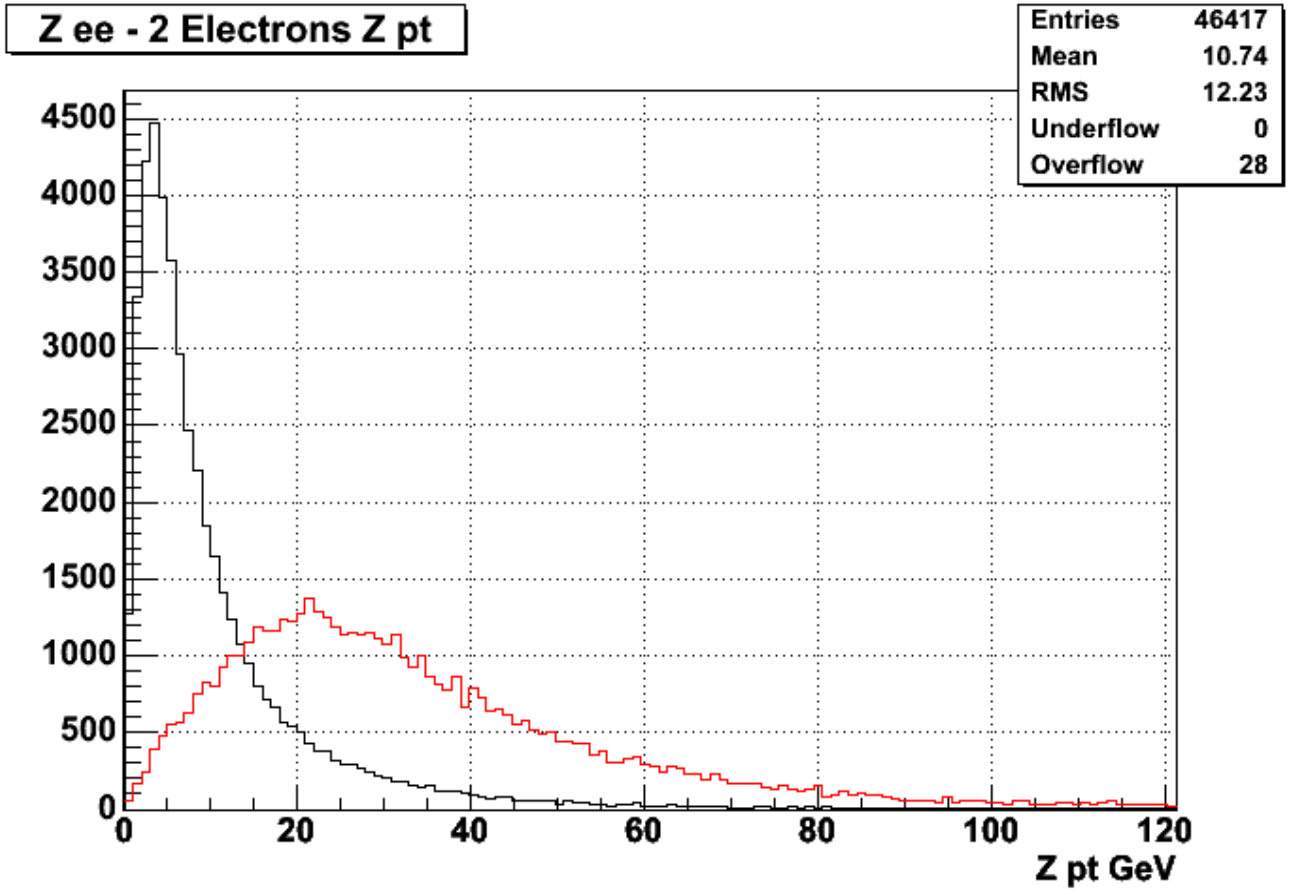
Electron cuts for the Z
pt>8.0
-3.5<detector eta<3.5
Emf > 0.90
Isolation > 0.15
Hmatrix7 < 50
At least one track match
Z mass window 80 to 100 GeV

Jet Cuts
standard d0correct cuts except EM-Jet removal
-2.5<detector eta<2.5
pt>15.0 GeV

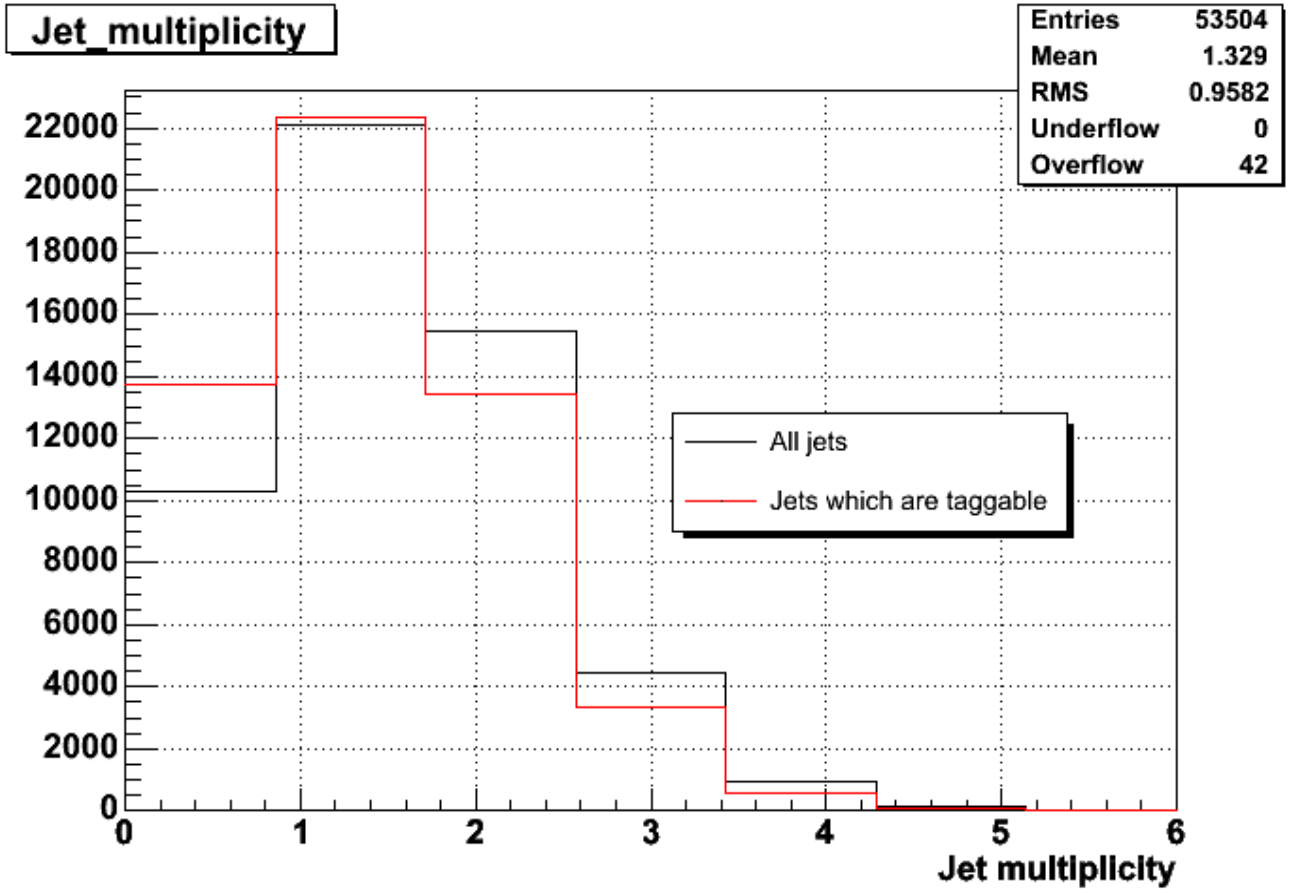
Two leading electrons



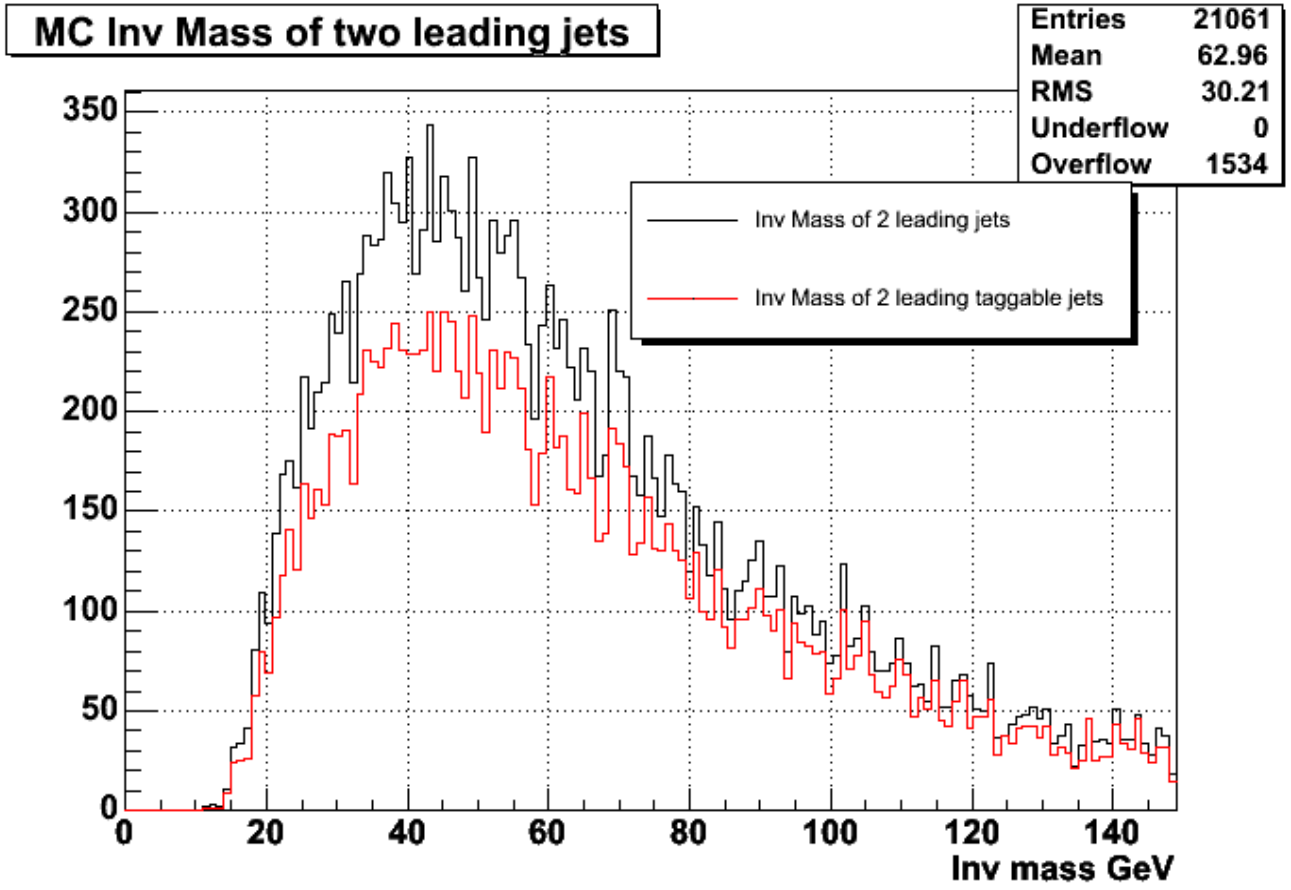
Black – data Z pt (not the same cuts on the electrons
Red – MC Z pt



Jet multiplicity



Not normalized



Starting Events – 98000

		loose	medium	tight
# events in Z mass window	- 53,504			
# b jets	- 107,008			
# jets after reco*id cuts	- 71,264			
# jets which are taggable	- 61,891			
# jets tagged with jlip	-	23,346	20,323	17,982
# jets tagged with SV	-	13,476	12,363	11,872
# jets taggable and have sv	-	22,085	20,367	19,414
# jets tagged with mu	-	36,844	36,634	36,557
# jets I matched with muon	-	5,883	muon pt > 5.0 GeV delta R < 0.50	

# events with 2+ jets	21,103
# events with 2+ taggable jets	16,865

Conclusion

Since we are swamped with b jets we expect much higher taggability on the jets

Need to investigate the difference between the svx and the sv tagger